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R-2508 Complex Users Handbook

24 April 2020

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Chapter 1: Introduction

This handbook prescribes policy and standard operating procedures for all users operating in the R-2508 Complex. Request for waivers or approval of non-standard operations in the complex must be requested through the Central Coordinating Facility (CCF) and approved by the Complex Control Board (CCB). The CCB meets bi-monthly. For inclusion on the next available CCB meeting contact the Central Coordinating Facility at 661-277-2508.

This handbook dated 03 January 2020 is the current handbook.
Recommended changes should be forwarded to:

R-2508 Central Coordinating Facility
100 East Sparks Drive
Edwards AFB, CA 93524-8090

Telephone: DSN 527-2508; (661) 277-2508
E-mail: 2508CCF@us.af.mil

Online Information Available:
Public assessable R-2508 Complex information and documentation is available to all users via the Edwards AFB public website at: **http://www.edwards.af.mil/About/R-2508**

- **R-2508 Complex User's Handbook**
- **R-2508 Complex User's Brief**
- **Situation Report (SITREP)**
- **R-2508 Pilot Guide and Aerial Refueling Areas**
- **Sidewinder Low Level SOP**
- **Sidewinder Low Level Map**
- **R-2508 Transient Pilot Briefing (for KNID arrivals & departures only)**

- **R-2508 Complex Airspace Request Form**
- **R-2515 Airspace website link**

CCF Daily Schedule and additional online information available via the R-2508 Complex AFNET SharePoint Site: https://usaf.dps.mil/teams/12162 Access to this site requires an AFNet account in order to access the AFNet SharePoint site and a CAC login. Users must establish an account and maintain currency. Information is updated real time. To establish an AFNet account you will need a current Information Awareness training certificate, a completed DD Form 2875, and approval from 412th OSS IAO at DSN: 525-4269 or (661) 525-4269.

Chapter 2: Complex Description and Use

2.1. R-2508 Complex Airspace Description: The R-2508 Complex includes all the airspace and associated land presently used and managed by the three principal military activities in the Upper Mojave Desert region, the 412 Test Wing (412TW), Edwards Air Force Base (AFB), CA., the National Training Center (NTC), Fort Irwin, CA., and the Naval Air Warfare Center Weapons Division (NAWCWD), China Lake, CA

2.2. Typical Military Activity within the Complex include:

- Aircraft research and development in all stages of flight
- Operational weapons test and evaluation flights
- Student pilot training
- Air combat maneuvering (ACM) and proficiency flights
- Civilian test aircraft in direct support of DoD and/or defense testing

To best use the available airspace, participating aircraft operating in R-2508 Complex shared-use airspace are not given exclusive use of the airspace and are considered to be operating under concurrent operations. Participating aircraft must accept radar traffic advisories and use the "see-and-avoid" principle to avoid interfering with the missions of other aircraft.

2.3. Targets of Opportunity: Low observable platforms (i.e., F-22, F-35 and B-2) conduct flight tests throughout the R-2508 Complex. During these missions, it is critical these aircraft not be used as targets for any ground, airborne, or space-based sensors or emitters. ***If any device inadvertently***

tracks these aircraft, the resulting data is classified and must be properly safeguarded.

- After flight, immediately report the incident to the Edwards AFB Command Post (COMM (661) 277-3040 or DSN 527-3040) for disposition of data and debriefing instructions.
- Any person that discusses information relating to sensor effectiveness in acquiring, tracking, and targeting these aircraft with anyone other than the person assigned to investigate the incident may violate Federal and DoD regulations and policy for the protection of classified information in Special Access Required (SAR) programs.

2.4. R-2508 Complex Configuration: The R-2508 Complex is composed of Restricted Areas, Military Operations Areas (MOAs), and Air Traffic Control Assigned Airspace (ATCAAs) (see Figure 2-1).

2.4.1. R-2508 vertical dimension: FL200 to unlimited

- **Controlling Agency**: Joshua Control Facility (Joshua Approach)
- **Using Agency**: U.S. Navy, Naval Air Warfare Center Weapons Division (NAWCWD, China Lake, CA.
- **Scheduling Agency**: R-2508 CCF Scheduling Office. Special operations should be coordinated through the R-2508 CCF prior to scheduling.

R-2508 Central Coordinating Facility - Complex Shared Use Airspace

Area	**Agency**	**Hours of Operation**	**Function**	**Contact Numbers**
R-2508, MOAs and ATCAAs	R-2508 Central Coordinating Facility (CCF) Edwards AFB	0600-1800L (Excluding Federal Holidays)	Complex Management, Airspace Scheduling, Mission Coordination, Airspace Briefings	DSN 527-2508 (661) 277-2508 After hours phone: 1-866-805-2851

Email: **2508ccf@us.af.mil**

Web Site / SharePoint

http://www.edwards.af.mil/Home/R-2508 **https://usaf.dps.mil/teams/12162**

Figure 2-1: R-2508 Complex Restricted Area, MOA & ATCAA Airspace

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2.5. Internal Restricted Areas: Within R-2508 are five additional restricted areas:

2.6. R-2502N and R-2502E National Training Center, Fort Irwin

2.6.1. R-2502N and R-2502E vertical dimensions of surface to unlimited.

- **Controlling Agency**: R-2502N – Joshua Control Facility (Joshua Approach)
  R-2502E – Los Angeles ARTCC
- **Using Agency**: National Training Center (NTC)
- **Scheduling Agency**: Desert Radio.

Desert Radio - National Training Center (NTC) Fort Irwin

R-2502N **R2502E**	Desert Radio Fort Irwin	24 hours a day	Desert Radio ATC	DSN 470-4320/6816/7559 (760) 380-4320/6816/7559
		0800–1600 M-F	Range Scheduling	DSN: 470-3875 (760) 380-3875
		0800–1600 M-F	Airspace Manager	DSN 470-5852 / 6156 (760) 380-5852 / 6156
		0800–1600 M-F	Facility Manager	DSN 470-6369 (760) 380-6368

2.6.2. Command and Control: Aircraft must be in contact with and under the control of one of the following agencies:

Airspace Information Center (AIC) Fort Irwin "Desert Radio"	AIC is the primary control for R-2502N and R-2502E. AIC is operational 24 hours/7 days. Frequencies: UHF 281.45; VHF 126.2; FM 66.10 Initial contact with Desert Radio is required prior to entering R-2502N and R-2502E.
NTC Airspace Control Center (NACC) Fort Irwin (NACC/Sundance)	NACC/Sundance is a multi-function Air Force element that serves as a focal point for close-air support activities. Functions include airspace procedural control and direct airspace coordination/de-confliction with Operations Group and AIC. Manned 1 hour prior to the first take off time from Nellis AFB until 30 minutes past the last flight's departure from R-2502N/E, or as required. If a flight is approved and Sundance is not operational, contact Desert Radio.

2.6.3. Scheduling:

- Requests for use of ranges and training areas will be submitted to Range Scheduling (760-380-4321) no later than 5 working days prior to the desired use date for Standard Ranges and 14 days prior for non-standard ranges.

- All aircraft operations within R-2502N/E require coordination with Bicycle Lake Army Field.

- Contact CCF to schedule the MOAs for entry and exit.
- Prior Permission Required (PPR) should be obtained from Bicycle Lake Army Air Field (AAF) 72 hours (3 working days) before operations to allow for required coordination.

2.7. R-2505, R-2506 and R-2524 Naval Air Warfare Center, Weapons Division, China Lake

2.7.1. R-2505, R-2506 and R-2524 vertical dimensions:

- **R-2505** vertical dimension of surface to unlimited
- **R-2506** extends from surface to 6,000 feet MSL
- **R-2524** vertical dimension of surface to unlimited
- **Controlling Agency**: Joshua Control Facility (Joshua Approach)
- **Using Agency**: Naval Air Warfare Center Weapons Division (NAWCWD), China Lake CA.
- **Scheduling Agency**: China Lake Ranges Scheduling Office. Information on Restricted Areas R-2505, R-2506, and R-2524 may be obtained thought the appropriate range scheduling or test management office as listed below.

Naval Air Warfare Center Weapons Division (NAWCWD) China Lake

R-2505	NAWCWD	0700–1700 M-TH	China Lake Ranges	DSN 437-6800
R-2506	China Lake	0700–1600 Civilian	Scheduling Office	(760) 939-6800
R-2524		Non-Payday Fridays	Airspace Manager	760-939-5480
Superior Valley				

2.7.2. Command and Control: Radar advisory service for Restricted Areas R-2505, R-2506, and R-2524 is provided by the China Control, 301.0 MHz

China Control	**Hours**	**Contact Numbers**
Airspace Surveillance Center (ASC) "China Control"	0700–1700 M-TH 0700–1600 F (non-civilian payday)	DSN 437-6908/9, (760) 939-6908/9 Fax: DSN 437-6855, (760) 939-6855

2.8. R-2515 412 Test Wing, Edwards AFB

2.8.1. R-2515 vertical dimension of surface to unlimited

- **Controlling Agency**: Joshua Control Facility (Joshua Approach)
- **Using Agency**: 412 Test Wing (412 TW)

- **Scheduling Agency**: 412 Current Ops Scheduling Office. IAW EAFBI 11-115. Information on and scheduling of Restricted Area 2515 may be obtained thought the appropriate office as listed below.

412th Center Scheduling (412 TW) Edwards AFB

R-2515	412th Current Ops Future Scheduling Edwards AFB	0600–1600 M-F	412th Current Ops Scheduling	DSN 527-4110 (661) 277-4110
	412th Current Ops Same Day Scheduling Edwards AFB	0600-1800 M-F	Same Day Scheduling:	DSN 527-3940 (661) 277-3940
	Airspace Manager			DSN 527-2515 (661) 277-2515

2.8.2. Command and Control: Radar advisory service for Restricted Area 2515 is provided by the SPORT, 343.7/132.75 MHz

SPORT MILITARY RADAR UNIT	Hours	Contact Numbers
MRU: “SPORT”	0700–1700 M-F 0700–1900 M-F (DST) Weekend as required	DSN 527-3928/6184, (661) 277-3928/6184

NOTE: Entry to these areas requires prior approval from the designated using agency. *FAA/DoD Joint Use: Internal restricted area Using Agencies may release restricted areas, in their entirety or in part, by providing the Controlling Agency with altitudes activated for DoD use and releasing the remaining airspace to the Controlling Agency for FAA/DoD joint use.*

2.9. Military Operations Areas (MOAs) and Air Traffic Control Assigned Airspace (ATCAA’s): The MOAs and ATCAA areas combine with R-2508 to form the four major work areas (see Fig. 2-1).

2.9.1. MOA Areas: The four main **MOA work areas** are Isabella, Owens Saline, and Panamint MOAs DO NOT include airspace below 1,500 feet AGL within 3 miles of any charted airport, except for Mojave Airport’s Class D airspace (4,800 feet MSL within a 5 NM radius, excluding the airspace east and parallel to a line ½ mile west of R-2515).

2.9.2. Portions of these major work areas are located over **Sequoia/Kings Canyon National Parks, John Muir and Domeland Wilderness Areas, and Death Valley National Park** (Figures 2-13, 2-14 & 2-18).

2.9.3. The **ATCAAs** (Figure 2-1) are used to fill the airspace gap between the top of the MOAs (FL180) and the base of R-2508 (FL200). When R-2508 is not activated, the ATCAAs may extend

upward to FL600. ATCAAs are also located above the peripheral MOAs, outside the lateral boundaries of R-2508, to provide additional work areas up to FL600 for segregation of military operations from IFR traffic.

NOTE: Exclusion of MOA airspace above Death Valley National Park and Domeland Wilderness Area applies to the 1977 contours of the former National Monument and Wilderness Area. This difference in affected airspace may not be accurately reflected in Sectional Charts. Refer to Figures 2-10 & 2-11, the California Desert Protection Act of 1994 (https://uscode.house.gov/view.xhtml?req=(title:16%20section:410aaa-82%20edition:prelim) or contact CCF for more information.

CAUTION: The Owens MOA/ATCAA and Bishop MOA make up the Owens work area. Bishop MOA is not included in the Sage 2 or Pancho 3 Clearances and must be scheduled separately through CCF. Aircrews must be aware of this boundary difference to prevent spill-outs into Oakland Air Route Traffic Control Center (ARTCC) airspace.

2.10. Isabella MOA/ATCAA.

2.10.1. Description and Operations: The Isabella MOA covers 200 feet AGL to 17,999 MSL and the ATCAA covers FL180 to FL600 (see Figure 2-1). Isabella is typically used for the following activities:

- Primary holding point for armed aircraft using R-2505 and test aircraft using R-2524 Research, Development, Test, and Evaluation (RDT&E) and Operational Test and Evaluation (OT&E)
- Rapid maneuvering and ACM conducted over Saltdale/Koehn Lake (heavy use by Edwards AFB at all altitudes)
- Arrivals and departures from NAWS China Lake (R-2505)
- Orbit of refueling aircraft in support of restricted area operations
- Crossing of several Military Training Routes (MTRs) (see Figure 2-2)

2.10.2. Isabella MOA/ATCAA dimensions.

Beginning at	36°08’00”N/118°35’03”W
thence direct	36°08’00”N/117°53’03”W
thence south and east along the boundary of R-2505 to	35°39’15”N/117°29’26”W
thence direct	35°21’00”N/117°38’33”W
thence direct	35°19’20”N/117°38’33”W
thence along the western boundary of R-2515 to	34°49’40”N/118°05’48”W
thence direct	34°48’00”N/118°05’48”W
thence direct	34°51’00”N/118°14’03”W
thence direct	34°56’00”N/118°21’03”W
thence direct	35°15’00”N/118°35’03”W
thence direct to the point of beginning.	

Figure 2-2: Military Training Routes (MTRs) and Highways

2.10.3. Special Considerations:

2.10.4. Altimeter Settings. Aircraft use the Edwards AFB local altimeter.

2.10.5. The MOA excludes **Mojave Air & Space Port** Class D Surface Area: Surface to and including 4,800 feet MSL within a 4.3 NM radius of the Mojave Airport, excluding that airspace east and parallel to a line ½ mile west of R-2515 boundary.

2.10.6. Altitudes in the MOA exclude the airspace up to and including 3,000 feet AGL floor over **Domeland Wilderness Area**, as it existed in 1977. The airspace also excludes the airspace up to and including 1,500 feet AGL within a 3 NM radius of the following airports:

Rosamond Inyokern County Sacatar-Meadows
Mountain Valley Kelso Valley Ranch California City
Flying S Ranch Kern County Kern Valley
Lloyds Tehachapi

2.10.7. High Density Traffic Area: The south-east portion of Isabella is a high density traffic area where a large variety of missions are conducted by multiple platforms simultaneously. These activities include, but are not limited to, air-to-air refueling in Isabella Refueling Area, Edwards AFB arrival and departure traffic, Superior Valley transitions, Palmdale Plant 42 arrivals and departure traffic, UAV and rocket operations, and Mojave Test Pilot School operations. Aircrews operating in this area should expect numerous traffic calls and request traffic updates as necessary to maintain positive situational awareness (see Figure 2-3).

Figure 2-3: High Density Traffic Area

2.11. Owens MOA/ATCAA (contains the Bishop MOA which must be scheduled separately)

2.11.1. Description and Operations: The Owens MOA covers 200 feet AGL to 17,999 MSL and the ATCAA covers FL180 to FL600. The Bishop MOA underlies the northeast corner of the airspace under the Owens ATCAA; be aware of the difference in airspace size. Owens is typically used for the following activities:

- OT&E/RDT&E, ACM, and training by units from NAS Lemoore, NAWS China Lake, Fresno ANG, and Edwards AFB
- Crossing of several MTRs (see Figure 2-2)

2.11.2. Owens MOA dimensions:

Beginning at	37°12’00”N/118°35’03”W
thence direct	37°12’00”N/118°26’03”W
thence direct	37°02’00”N/118°20’03”W
thence direct	37°09’00”N/118°00’03”W
thence direct	36°46’00”N/118°00’03”W
thence direct	36°14’00”N/117°36’03”W

thence along the northern and western boundary of R-2505 to 36°08’00”N/117°53’03”W

thence direct	36°08’00”N/118°35’03”W

Thence direct to the point of beginning.

2.11.3. Owens ATCAA dimensions:

Beginning at	37°12’00”N/118°35’03”W
thence direct	37°12’00”N/118°00’03”W
thence direct	36°46’00”N/118°00’03”W
thence direct	36°14’00”N/117°36’03”W

thence along the northern and western boundary of R-2505 to 36°08’00”N/117°53’03”W

thence direct	36°08’00”N/118°35’03”W

Thence direct to the point of beginning.

NOTE: Aircrews should use caution in crossing the Owens Valley east to west/west to east. Typical operations run north to south with multiple aircraft operating at varying altitudes.

2.11.4. Special Considerations.

2.11.5. Altimeter Setting. Aircraft use the China Lake local altimeter.

2.11.6. Restrictions. Altitude excludes 3,000 feet AGL floor over Kings Canyon National Park, Sequoia National Park, and John Muir Wilderness Area. Altitude also excludes 1,500 feet AGL within a 3 NM radius of the Lone Pine and Independence airports.

NOTE: Avoid establishing holding patterns and/or conducting ACM activities over communities within the Owens Valley.

2.12. Bishop MOA: The Bishop MOA covers 200 feet AGL to 17,999 MSL (see Figure 2-1). Bishop MOA is located in the northeast corner of the Owens Work Area.

2.12.1. Bishop MOA dimensions:

Beginning at	37°12’00”N/118°26’03”W
thence direct	37°12’00”N/118°00’03”W
thence direct	37°09’00”N/118°00’03”W
thence direct	37°02’00”N/118°20’03”W
Thence direct to the point of beginning.	

2.12.2. Scheduling: Bishop MOA must be scheduled in advance with CCF to ensure actions are pre-coordinated with Oakland ARTCC. Additionally, aircrews must request use of the Bishop MOA real time with Joshua Approach. Times of use are Monday to Friday, 0600–2200. Other times by NOTAM.

2.12.3. Special Procedures: For the Bishop MOA, use the Bishop local altimeter when in use by Oakland ARTCC. Use the China Lake local altimeter when in use by High Desert TRACON/LA ARTCC.

2.13. Saline MOA/ATCAA.

2.13.1. Description and Operations: The Saline MOA covers 200 feet AGL to 17,999 MSL and the ATCAA covers FL180 to FL600. Saline is typically used for the following activities:

- OT&E, RDT&E, ACM, and training by NAS Lemoore, NAWS China Lake, Fresno ANG, and Edwards AFB
- Low and high-altitude refueling activities (Saline Valley)

- Crossing of several MTRs (see Figure 2-2)
- Special platform aircraft orbits

2.13.2. Saline MOA/ATCAA dimensions:

Beginning at	37°12’00”N/118°00’03”W
thence direct	37°12’00”N/117°20’03”W
thence direct	36°30’00”N/116°55’03”W
thence direct	36°30’00”N/117°48’03”W
thence direct	36°46’00”N/118°00’03”W
thence direct to the point of beginning.	

2.13.3. Special Considerations

2.13.4. **Altimeter Setting**. Aircraft use the China Lake local altimeter.

2.13.5. **Altitudes** do not include 3,000 feet AGL and below over **Death Valley National Park** matching the line described below.

2.13.6. The **boundary of Death Valley National Park** (see Figures 2-13 & 2-15) within Saline is:

Beginning at	37°01’19”N/117°13’39”W
thence direct	37°01’19”N/117°13’50”W
thence direct	37°05’01”N/117°18’54”W
thence direct	37°05’05”N/117°33’47”W
thence direct	36°58’57”N/117°33’47”W
thence direct	36°58’56”N/117°34’05”W
thence direct	36°53’55”N/117°34’11”W
thence direct	36°53’51”N/117°35’16”W
thence direct	36°51’10”N/117°35’16”W
thence direct	36°51’08”N/117°36’20”W
thence direct	36°47’58”N/117°36’18”W
thence direct	36°47’51”N/117°37’07”W
thence direct	36°40’21”N/117°37’08”W
thence direct	36°40’21”N/117°36’03”W
thence direct	36°37’45”N/117°36’05”W
thence direct	36°37’45”N/117°31’44”W
thence direct	36°36’52”N/117°31’44”W
thence direct	36°36’56”N/117°30’53”W
thence direct	36°36’38”N/117°30’26”W
thence direct	36°36’31”N/117°29’54”W
thence direct	36°35’54”N/117°29’43”W
thence direct	36°35’27”N/117°28’59”W
thence direct	36°35’29”N/117°28’41”W
thence direct	36°34’21”N/117°28’32”W
thence direct	36°33’29”N/117°28’45”W
thence direct	36°32’39”N/117°30’16”W
thence direct	36°31’56”N/117°30’08”W
thence direct	36°31’29”N/117°28’20”W
thence direct	36°30’16”N/117°25’34”W
thence direct	36°30’00”N/117°25’35”W

NOTE: Pay specific and careful attention to the ridge crossing at Hunter Mountain that divides the Panamint and Saline MOAs (see Figure 2-4). The “saddle” on the ridgeline is a narrow passage between the MOAs and is served by VR1205, which inherently possesses a high potential for a head-on collision. Use standard “rules-of-the-road” while approaching and passing through

the saddle. Pilots should fly to the right side when passing through the saddle area. This helps prevent head-on collisions with aircraft passing in the opposite direction.

Figure 2-4: VR-1205 Hunter Mountain Saddle

2.14. Panamint MOA/ATCAA.

2.14.1. Description and Operations: The Panamint MOA covers 200 feet AGL to 17,999 MSL, and the ATCAA covers FL180 to FL600. Panamint is typically used for the following activities:

- Support of R-2502N, R-2502E, and R-2524 operations by Nellis AFB, NAWS China Lake, Fresno ANG, and Edwards AFB
- OT&E, RDT&E, ACM, low-altitude training, and large-scale exercises
- Crossing of several MTRs (see Figure 2-2)
- Low and high-altitude refueling
- UAS Transitions to and from Creech AFB at FL190 and FL200

2.14.2. **Panamint MOA and ATCAA dimensions:**

Beginning at	36°30’00”N/117°48’03”W
thence direct	36°30’00”N/116°55’03”W
thence direct	35°34’30”N/116°23’33”W
thence along the northern boundary of R-2502N, the eastern, northern, and western boundaries of R-2524, and the northwestern boundary of R-2505 to	35°19’20”N/117°38’33”W
thence direct	35°21’00”N/117°38’33”W

thence direct	35°39’15”N/117°29’26”W

thence along the eastern and northern boundary of R-2505 to 36°14’00”N/117°36’03”W
Thence direct to the point of beginning.

2.14.3. **Special Procedures**

2.14.4. **Altimeter Setting**. Aircraft use the China Lake local altimeter.

2.14.5. **Panamint Exclusions**. The MOA excludes 1,500 feet AGL and below within a 3 NM radius of the Trona airport and 3,000 feet AGL and below over 1977 boundaries of Death Valley National Monument north and east of the line described below.

2.14.6. The **boundary of Death Valley National Park** within Panamint is:

Beginning at	36°30’00”N/117°25’35”W
thence direct	36°29’46”N/117°25’36”W
thence direct	36°27’14”N/117°22’01”W
thence direct	36°25’41”N/117°22’01”W
thence direct	36°25’34”N/117°20’58”W
thence direct	36°26’16”N/117°19’11”W
thence direct	36°25’00”N/117°18’36”W
thence direct	36°25’10”N/117°17’57”W
thence direct	36°24’15”N/117°17’23”W
thence direct	36°23’48”N/117°15’36”W
thence direct	36°13’57”N/117°15’33”W
thence direct	36°13’55”N/117°09’09”W
thence direct	36°08’44”N/117°09’04”W
thence direct	36°08’40”N/117°09’04”W
thence direct	36°06’58”N/117°03’47”W
thence direct	36°05’54”N/117°04’33”W
thence direct	36°05’28”N/117°03’54”W
thence direct	36°01’42”N/117°02’34”W
thence direct	35°58’53”N/117°04’31”W
thence direct	35°58’37”N/117°05’17”W
thence direct	35°57’13”N/117°06’45”W
thence direct	35°55’23”N/117°06’35”W
thence direct	35°54’11”N/117°05’24”W
thence direct	35°53’10”N/117°01’39”W
thence direct	35°52’54”N/116°55’21”W
thence direct	35°47’44”N/116°55’22”W
thence direct	35°47’44”N/116°36’05”W
thence direct	35°39’03”N/116°36’01”W
thence direct	35°39’03”N/116°26’06”W

NOTE: See Note associated with Figure 2-4 with regards to the ridge crossing at Hunter Mountain.

2.15. Peripheral Work Areas: R-2508 has several peripheral MOAs and/or ATCAAs that increase the amount of usable airspace for complex users.

2.16. Bakersfield (MOA and ATCAA): The Bakersfield MOA covers 2,000 feet AGL to 17,999 MSL, while the ATCAA covers FL180 to FL600 (see Figure 2-1). Bakersfield is outside of R-2508 but may be scheduled in conjunction with Isabella Work Area operations.

2.16.1. Bakersfield (MOA and ATCAA) dimensions: (Both the MOA and the ATCAA share the same dimensions.)

Beginning at	35°40’00”N/118°51’03”W
thence direct	35°40’00”N/118°35’03”W
thence direct	35°15’00”N/118°35’03”W
thence direct	34°56’00”N/118°21’03”W
thence direct	35°14’00”N/118°42’03”W

Thence direct to the point of beginning.

2.16.2. Scheduling: The Bakersfield MOA/ATCAA must be scheduled in advance with CCF to ensure actions are pre-coordinated with Los Angeles Air Route Traffic Control Center (ARTCC). Scheduled events must then request the Bakersfield MOA/ATCAA real time with Joshua Approach**.** The MOA is activated intermittently by NOTAM, therefore aircrews must provide a minimum 2 hour notice (preferably 1 day prior) to allow for NOTAM processing.

2.16.3. Special Procedures: For both the MOA and ATCAA, use the Edwards AFB local altimeter.

2.17. Barstow (MOA and East & West ATCAAs): The Barstow MOA covers 200 feet AGL to 17,999 MSL. Both Barstow East and Barstow West ATCAAs cover FL180 to FL600 (see Figure 2-1). Barstow is used generally for the following purposes:

- Flight test operations at Edwards AFB
- Helicopter and fixed wing aircraft entering, exiting, or awaiting entry into R-2502N and R-2502E
- Military traffic on VR1217/VR1218 (see Figure 2-2)

2.17.1. Barstow MOA dimensions:

Beginning at	35°07’00”N/116°34’03”W
thence direct	35°01’20”N/116°41’03”W
thence direct	34°56’20”N/117°09’03”W

Thence along the eastern border of R-2515 and the southern boundary of R-2502E to the point of beginning.

2.17.2. Barstow East ATCAA dimensions:

Beginning at	35°07’00”N/116°47’48”W
thence direct	35°07’00”N/116°34’03”W
thence direct	35°01’20”N/116°41’03”W
thence direct	34°58’30”N/116°57’48”W

Thence direct to the point of beginning.

2.17.3. Barstow West ATCAA dimensions:

Beginning at	35°06’30”N/116°58’43”W
thence direct	35°08’50”N/116°48’43”W
thence direct	35°07’00”N/116°47’48”W
thence direct	34°58’30”N/116°57’48”W
thence direct	34°56’20”N/117°09’03”W

Thence direct to the point of beginning.

2.17.4. Scheduling: Times of use are Monday to Friday, 0600–2200. Other times by NOTAM.

2.17.5. Special Procedures:

- For Barstow MOA and ATCAAs, use the Edwards AFB local altimeter.
- Aircrews operating in Barstow or Shoshone must ensure that they request work areas Barstow East, Barstow West, Shoshone North, or Shoshone South ATCAA airspace in conjunction with the appropriate lower MOA airspace when needed.
- Aircrews requiring FL240 and above within Barstow East ATCAA must request those altitudes real time with ATC Facility/MRU and can expect a maximum of 15-minute delay in receiving clearance.

NOTE: The ATCAAs over the Barstow MOA have a different boundary than the airspace underneath (see Figure 2-1). Aircrews must be aware of these boundary differences to prevent spill-outs into LA Center airspace.

2.18. Buckhorn (MOA and ATCAA): The Buckhorn MOA covers 200 feet AGL to 17,999 MSL, while the ATCAA covers FL180 to FL600 (see Figure 2-1). Buckhorn is used extensively for test missions at Edwards AFB.

2.18.1. Buckhorn (MOA and ATCAA) dimensions:

Beginning at	34°49’40”N/118°05’48”W
thence along the southern boundary of R-2515 to	34°51’17”N/117°26’03”W
thence direct	34°49’30”N/117°26’03”W
thence direct	34°46’30”N/117°35’03”W
thence direct	34°46’00”N/118°00’03”W
thence direct	34°48’00”N/118°05’48”W

Thence direct to the point of beginning.

2.18.2. Scheduling: Times of use are Monday to Friday, 0600–2200. Other times by NOTAM.

2.18.3. Special Procedures: For both the MOA and the ACTAA, aircraft use the Edwards AFB local altimeter**.**

2.19. Deep Springs ATCAA: Deep Springs ATCAA covers FL240 to FL600 (see Figure 2-1). It borders the northern border of the Saline ATCAA.

2.19.1. Deep Springs ATCAA dimensions:

Beginning at	37°12’00”N/118°00’03”W
thence direct	37°30’00”N/118°00’03”W
thence direct	37°30’00”N/117°30’03”W
thence direct	37°12’00”N/117°20’03”W

2.19.2. Scheduling: Deep Springs ATCAA must be scheduled in advance with CCF to ensure activities are pre-coordinated with Oakland ARTCC.

2.19.3. Special Procedures:

- Aircraft use the China Lake local altimeter.
- Scheduled events must additionally request the Deep Springs ATCAA real time with Joshua Approach.

2.20. Porterville (MOA and ATCAA): The Porterville MOA covers 2,000 feet AGL to 17,999 MSL, and the ATCAA covers FL180 to FL600 (see Figure 2-1). Porterville is outside of the R-2508 but may be scheduled in conjunction with Isabella Work Area.

2.20.1. Porterville (MOA and ATCAA) dimensions:

Beginning at	36°08’00”N/119°00’03”W;
thence direct	36°08’00”N/118°35’03”W;
thence direct	35°40’00”N/118°35’03”W;
thence direct	35°40’00”N/118°51’03”W;

Thence direct to the point of beginning.

2.20.2. Scheduling: Porterville MOA/ATCAA must be scheduled in advance with CCF to ensure activities are pre-coordinated with Los Angeles Air Route Traffic Control Center (ARTCC). Scheduled events must additionally request the Porterville MOA/ATCAA real time with Joshua Approach. The MOA is activated intermittent by NOTAM, aircrews must provide a 2 hour notice at minimum in order to issues a NOTAM, preferably request day prior.

2.20.3. Special Procedures:

- Aircraft based at NAS Lemoore use the Fresno local altimeter. All other aircraft use the China Lake local altimeter.
- Scheduled events must additionally request the Porterville MOA/ATCAA real time with Joshua Approach.

2.21. Shoshone (MOA and North/South ATCAAs)

The Shoshone MOA covers 200 feet AGL to 17,999 MSL. The North and South ATCAAs cover FL180 to FL600 (see Figure 2-1). Shoshone MOA/ATCAA airspace is used for the following types of operations:

- OT&E, ACM, low-altitude training, and large-scale exercises (usually in conjunction with Panamint)
- Low-altitude tanking operations in support of large-scale exercises
- Crossing of several MTRs (see Figure 2-2)

2.21.1. Shoshone MOA dimensions:

Beginning at	36°30’00”N/116°55’03”W
thence direct	36°30’00”N/116°47’03”W
thence direct	36°06’00”N/116°18’03”W
thence direct	35°39’00”N/115°53’03”W
thence direct	35°18’45”N/116°18’48”W
thence direct	35°28’22”N/116°18’48”W
thence direct	35°34’30”N/116°23’33”W

2.21.2. Shoshone North ATCAA dimensions:

Beginning at	36°30’00”N/116°55’03”W
thence direct	36°30’00”N/116°47’03”W
thence direct	36°06’00”N/116°18’03”W
thence direct	35°44’15”N/115°57’48”W
thence direct	35°28’35”N/116°18’48”W
thence direct	35°34’30”N/116°23’33”W

Thence direct to the point of beginning.

2.21.3. Shoshone South ATCAA dimensions:

Beginning at	35°44’15”N/115°57’48”W
thence direct	35°39’00”N/115°53’00”W
thence direct	35°18’45”N/116°18’46”W
thence direct	35°28’35”N/116°18’46”W
Thence direct to the point of beginning	

2.21.4. Scheduling: Schedule through CCF. Times of use are Monday to Friday, 0600–2200. Other times by NOTAM.

2.21.5. Special Procedures:

- Aircraft use the China Lake local altimeter.
- Aircrews must request use of the Shoshone MOA and ATCAAs real time with Joshua Approach.
- Aircrews operating in Barstow or Shoshone must ensure they request work areas Barstow East, Barstow West, Shoshone North, and/or Shoshone South ATCAA airspace in conjunction with the appropriate lower MOA airspace when needed.
- The ATCAAs over the Shoshone MOA have different boundaries than the airspace underneath (see Figures 2-1). Aircrews must be aware of these boundary differences to prevent spill outs into Los Angeles Air Route Traffic Control Center (ARTCC) airspace.
- Altitudes Restrictions: 1,500 feet AGL within a 3 NM radius of the Shoshone airport and 3,000 feet AGL over Death Valley National Park (coordinates below).
- Aircrews requiring FL240 and above within Shoshone South ATCAA must request those altitudes real time with Joshua Approach. Aircrews should expect a maximum of 15-minute delay in receiving clearance to operate above FL240.

2.21.6. The boundary of **Death Valley National Park** within Shoshone MOA are:

Beginning at	35°39’03”N/116°26’06”W
thence direct	35°39’03”N/116°21’48”W
thence direct	35°48’14”N/116°21’49”W
thence direct	35°48’11”N/116°29’41”W
thence direct	35°52’17”N/116°29’43”W
thence direct	35°58’22”N/116°26’22”W
thence direct	35°58’23”N/116°35’47”W
thence direct	36°10’08”N/116°35’47”W
thence direct	36°10’11”N/116°38’58”W
thence direct	36°17’57”N/116°39’01”W
thence direct	36°17’58”N/116°40’33”W
thence direct	36°18’30”N/116°41’05”W
thence direct	36°24’54”N/116°41’04”W
thence direct	36°24’54”N/116°40’51”W

2.22. Other Areas within the Complex: Golden Triangle, Trona CFA, and Trona Corridor

2.22.1. The Golden Triangle is a portion of R-2515 that extends north of the westerly extension of the southern boundary of R-2524 (see Figure 2-5). Aircraft requesting East-West transitions of the Golden Triangle may be required to remain north of Cuddeback Lake. Coordinates for the Golden Triangle:

Beginning at	35°27’40”N/117°26’03”W;
thence direct	35°15’56”N/117°26’03”W;
thence direct	35°15’56”N/117°43’41”W;

thence to the point of beginning.

Figure: 2-5 Golden Triangle

2.22.2. The Trona Controlled Firing Area (CFA) (see Figure 2-6) is used for free flight weapon systems transiting from launch areas within R-2505 to target areas within R-2524 and from launch areas within R-2524 to target areas within R-2505. The CFA encompasses an area between R-2505 and R-2524. Boundaries:

Beginning at	35°37’30”N/117°35’33”W;
thence direct	35°40’30”N/117°25’03”W;
thence direct	35°36’00”N/117°16’55”W;
thence direct	35°27’40”N/117°26’03”W;

thence to the point of beginning.

Altitudes: 3,000ft AGL up to, but not including, FL200

Figure 2-6: Trona Controlled Firing Area (CFA)

2.22.3. The Trona Corridor (figure 2-7) encompasses an area between R-2505 and R-2524 and is used for the launching of free flight weapon systems FL200 and above. Additionally, real time transition of Unmanned Aerial System/s (UAS’s) FL180 and above occur between R-2505 and R-2524. The Corridor may be scheduled and used in conjunction with the Trona CFA. **NOTE: The Echo Bypass may be used to transit between R-2515 and Panamint (subject to China Control approval).**

Boundaries:

Beginning at 35°47’50”N/117°16’52”W;
thence direct 35°35’58”N/117°16’52”W;
thence direct 35°35’58”N/117°26’13”W;
thence direct 35°27’44”N/117°26’13”W;
thence direct 35°23’58”N/117°31’20”W;
thence direct 35°33’14”N/117°40’42”W;
thence direct 35°37’25”N/117°40’45”W;
thence direct 35°37’25”N/117°36’10”W;
thence direct 35°40’36”N/117°25’01”W;
thence direct 35°57’12”N/117°25’03”W;
thence to point of beginning.

Figure 2-7: Trona Corridor

2.23. Non-Military Activity within the Complex. Private civilian operations also occur as follows:

2.23.1. General Aviation: General aviation aircraft fly unrestricted in accordance with Visual Flight Rules (VFR) within the R-2508 Complex MOAs below FL180. Figure 2-8 shows the most common and heavily flown routes.

Figure 2-8: General Aviation VFR Transit Routes

Figure 2-8: General Aviation VFR Transit Routes

2.23.2. Hang Gliding, Ultralight, and Parachuting.

2.23.2.1. **Hang Glider operations** are occasionally conducted along the Sierra Nevada Mountain Range, along the west and northeastern shoreline of Owens Dry Lake, throughout the Owens Valley, and north along the Inyo Mountain Range to Bishop, California. Hang Glider operations are not scheduled through CCF.

2.23.2.2. Ultralight activity takes place in many areas throughout the R-2508 Complex MOAs and is primarily centered on towns and civil airports within the R-2508 Complex. Ultralight activities are not scheduled through CCF.

2.23.3. California City Airport is occasionally used for parachuting activities from surface to 17,999 feet MSL by private parachute clubs and DoD aircraft (see Figure 2-6). Parachuting activities originating from California City are published via NOTAM. When notified, CCF posts parachute activity on the Daily Brief Sheet.

2.23.4. Sailplane: Sailplane activities are conducted from the Tehachapi Mountain Valley, towns/cities of Lone Pine, Independence, Rosamond, Mojave, California City, and Inyokern airports. The "Wave Camp" sailplane operating area (see Figure 2-9) is located in the Isabella MOA and can be scheduled for use whenever soaring conditions permit. During times when Wave Camp is active, sailplane operations can be extremely heavy in the vicinity of Mojave and California City Airports due to launch and recovery of flights to/from airports transiting to/from the operating areas. Normally, the heaviest concentration of sailplane operations can be expected along and east of the Sierra Nevada Mountains from Tehachapi Pass to the mouth of Lone Tree Canyon (13 NM northeast of Tehachapi Pass). Sailplane operations below FL180 are Concentrated but not confined in the Isabella MOA, and Will remain clear of all internal restricted areas.

Figure 2-9: Wave Camp/California City DZ

- Sailplane operations above FL180 are required to have an operating Mode C transponder and maintain two-way radio contact with Joshua Approach.

Coordinates for the Wave Camp area:

Beginning at:	35°09'N/118°01'W (California City Airport),
thence direct	35°03'N/118°09'W (Mojave Airport),
thence direct	35°06'N/118°18'W (Highway 58/Tehachapi Pass),
thence direct	35°14'N/118°05'W (mouth of Lone Tree Canyon),

thence direct to the point of beginning.

2.23.5. Small UAS Work Area: The Small UAS Work Area (2014-WSA-228 Operating Area) is located approximately half way between Ridgecrest and California City airports and defined as a 5.0 nm radius of N 35°23’18”, W 117°57’05” (see Figure 2-10). Usable altitudes are from surface up to but not including 200 feet AGL. This UAS operating area underlies Isabella MOA, IR-211 and VR-1262 and is directly adjacent to IR200 and IR425. UAS operations within this area require the following prior notifications:

2.23.5.1. Scheduling. Contact R-2508 Central Coordinating Facility (CCF), Edwards AFB at (661) 277-2508 48 hours prior to the start of UAS operations. Notification must include the following via email to: 2508ccf@us.af.mil.

- UAS call sign
- UAS type aircraft
- Start and Stop times (convert local to Zulu)
- UAS operating altitudes
- NOTAM number
- Departure/Arrival location – Within 5.0 nm of N 35°23’18”, W 117°57’05”

Figure 2-10: Small UAS Area

2.23.5.2. VR-1262. Contact Commander, Strike Fighter Wing, U.S. Pacific Fleet at (559) 998-1034 of intent to operate in vicinity of VR-1262 between points I and J at least 24 hours prior to the start of UAS operations.

2.23.5.3. IR-200. Contact Commander, Naval Air Warfare Center, Weapons Division, at (805) 989-7358 of intent to operate in the vicinity of IR-200 between points J and K at least 24 hours prior to the start of UAS operations.

2.23.5.4. IR-211. Contact 3rd Marine Aircraft Wing, MCAS Miramar, San Diego at (858) 577-5157/9517/9518 of intent to operate in the vicinity of IR-211 between points G and H at least 24 hours prior to the start of UAS operations.

2.23.5.5. IR-465. Contact Commander, 412th TW, 412 OSS/OSO R-2515 Airspace Management, Edwards AFB at (661) 277-2515 of intent to operate in the vicinity of IR-425 (between Points AC and AD) at least 72 hrs prior to the start of UAS operations. R-2515Airspace Management hours of operation are M-F, 0800-1600, excluding Federal Holidays.

NOTE: Known Commercial sUAS Areas: When notified, CCF will post sUAS activity on the Daily Brief Sheet. Aircrews should also check NOTAMS/DROTAMS and SKYVECTOR https://skyvector.com/ website for most current information.

2.23.6. Mojave Aerobatic Practice Area (APA): 4.3 NM radius around MHV from 5,500 to 10,500 MSL. Located within lateral confines of MHV Class D (see Figure 2-11). Activated real-time by JOSHUA. **NOTE: MHV Class D: 4.3 NM radius excluding overlapping portion of R-2515, SFC-4,800 MSL.**

Figure 2-11: MHV Aerobatic Practice Area (APA)

2.23.7. Amateur Rocket Operations: Launch altitudes may be up to 18,000 feet AGL when R-2508 is active, and in excess of 50,000 feet at other times. Rocket operations may have associated sUAS operations inside the same area for the purpose of filming launches from above (see Figure 2-12).

Figure2-12: Amateur Rocketry Operations

2.23.8. Land Management Agency Operations: Agency helicopters and fixed-wing aircraft operate in the R-2508 Complex, primarily in the western portions of Isabella and Owens, and throughout the Panamint and Death Valley areas. Administrative support aircraft operations are normally 1,500ft AGL and below. Flight crews must be alert for fire suppression activities using aircraft during the fire season.

- Actual firefighting and associated support operations will normally be conducted within a Temporary Flight Restriction (TFR) (14CFR PART 91.137) NOTAM area within a defined area and altitude block.
- However, aircraft operations to/from staging bases may occur outside the NOTAM areas.
- Firefighting aircraft may be able to receive/transmit in-the-blind position/intention reports over 315.9 where cross-talk capabilities are available.

2.24. Sensitive Areas within the Complex: Aircrews must adhere to Code of Federal Regulations, Title 14 (14 CFR) and DoD rules (see figure 2-13).

Figure 2-13: R-2508 Complex Communities, Airports, and Sensitive Areas

2.24.1. Over-flight of National Parks/Wilderness Areas. Low flying over National Parks and Wilderness areas is an extremely sensitive issue.

2.24.2. Sequoia and Kings Canyon National Parks. All participating aircrews operating in the western Owens work area, within the boundaries of Sequoia and Kings Canyon National Parks (see Figure 2-14), shall maintain an altitude of FL180 or above unless lower altitude is required, if lower than FL180 is required indicate “SEKI” in the remarks section of the Airspace Request Form”.

At no time will any participating aircraft descend below 3,000 feet AGL within the boundaries of Sequoia and Kings Canyon National Parks except in an emergency situation. Lateral separation from Sequoia and Kings Canyon National Parks is 3,000 ft.

2.24.3. Death Valley National Park, Domeland, and John Muir Wilderness Areas: All aircrews shall maintain a minimum altitude of 3,000 feet AGL and a lateral distance of 3,000 feet (approximately ½ mile) from Death Valley National Park (1977 Monument Boundaries). Domeland and John Muir Wilderness Areas (see Figures 2-14 and 2-15)

Figure 2-14: Sequoia/Kings Canyon National Parks, Domeland, & John Muir Wilderness Area

Figure 2-15: Death Valley National Park

NOTE: Exclusion of the MOA airspace above Death Valley National Park and Domeland Wilderness Area applies to the 1977 contours of the former National Monument and Wilderness Area. This difference in affected airspace may not be accurately reflected in sectional charts. Contact CCF if you have further questions.

2.24.4. Overflight of Populated Areas: All communities within the R-2508 Complex are considered **"noise sensitive areas"**. Noise sensitive areas **shall be avoided by 3000'.** The only exception to the 3000' restriction is while operating on an approved test plan. Noise sensitive areas (see Figure 2-13) include:

2.24.4.1. ACM over Owens Valley. Aircrews should avoid conducting ACM activities over towns, especially in the Owens Valley. Even though the ACM activity may be at legal altitudes, such activity over towns should be avoided.

2.24.4.2. Avoid low-level flight over any obviously inhabited area. Recreational use near these communities and along the Kern River is highest during the summer months. Aircrews should anticipate increased sensitivity to operations near these areas.

2.24.5. Overflight of Private Commercial Activities: Aircrews should be aware of private commercial activities that occur within the R-2508 Complex (see Figure 2-16). These include:

- **Private Hunting club:** The official duck hunting season runs between October and January during the birds' southern migration. A hunting club on Little Lake (35°57'N/117°54'W), a migratory stop, is a private hunting activity. Aircrews should be alert for dangers of bird strikes transiting low-level through this area during hunting season. In addition, beware of increased bird activity within 1 hour of sunrise and sunset from October to March.

Figure 2-16: Private Commercial Activities

- **Randsburg Gold Mine:** A gold mine operated at Randsburg (35°21'30"N/117°36'45"W) conducts blasting with a vertical hazard footprint up to 400 feet AGL. Blasting is scheduled daily between 1400L and 1700L.
- **CR Briggs Mine:** Located at 35° 56' 17"N/117° 11' 09"W. Conducts blasting daily between 1000-1230L and 1600-1730L with flying debris to unknown altitudes.

2.25. NASA Facility at Goldstone. NASA facility (see figure 2-17) is highly sensitive to wide-band jamming and produces **High Intensity Radiated Fields (HIRF**) during high-power transmissions (see figure 2-18). The main concerns for the interaction between Goldstone and R-2508 users are the Radio-Frequency Interference from aircraft to Goldstone and impact of HIRF from Goldstone transmitters on aircraft. The physical interruption of signal due to aircraft transitioning through the beam is rare and need not be considered.

2.25.1 Radio Frequency Interference from aircraft. NASA facility at Goldstone is sensitive to any transmissions at 2200-2300 MHz, 8400-8500 MHz, 25,000-27,000 MHz and 31800-32300 MHz, bands that are allocated to Space Research Service (SRS). Broadband jamming and aeronautical telemetry in these bands are not allowed within line of sight of Goldstone without prior scheduling through the Western Area Frequency Coordinator, Point Mugu CA.

2.25.1.1. Scheduling over Goldstone. The NTC G3 Aviation Section is the coordinating authority for scheduling and coordinating all military aviation or flight activities (e.g. fixed-wing assets flying in support of NTC rotations) over Goldstone airspace.

Figure 2-17: Goldstone Facility Perimeter

2.25.1.2. Altitude Restrictions. Flights must stay above 5000 ft MSL (approximately 2000 ft AGL) and above 10,000FT MSL within 1.5 km (horizontal) from Goldstone antennas at Mars and Apollo, marked in the diagram above.

2.25.1.3. Scheduling Below Altitude Restrictions. Military aviation or flight activities below these levels must also be pre-approved by Goldstone Frequency and Airspace Coordination (760) 255-8218.

2.25.1.4. Users are advised to coordinate usage of spectrum with their representative on the Mojave Coordination Group (MCG).

2.25.1.5 HIRF from Goldstone Transmitters. NASA facility at Goldstone produces HIRF that could affect aircraft flying at less than 200 knots (see figure 2-19). The affected areas is shown in the diagrams below and apply to slow aircraft, with speed of less than 200 knots. If such slow aircraft need to enter the marked area, coordination with Goldstone Frequency and Airspace Coordination (760) 255-8218 is recommended. Note that:

- Probability of an aircraft entering the antenna beam is very low – the antenna beam is very narrow (typically a cylinder with width of 34m or 70m) and moves very slowly (at the rate of Earth rotation)
- In general, the Goldstone transmitters point south (solid semi-circle), less likely to point north (dashed semi-circle)
- Goldstone does not transmit in or near the standard GPS bands

- Physiologic effects may occur for very slow aircraft, e.g. hovering helicopters in the beam for a long time. While unlikely, such aircraft are advised to stay below the transmitter beam.

Figure 2-18: HIRF from Goldstone Transmitters

Figure 2-19: Goldstone Altitude Profiles

Chapter 3: R-2508 ATC Services

3.1. Traffic Advisories, Boundary Advisories, and ATC Services: Joshua Control Facility (JCF) call sign “Joshua Approach,” is a FAA Air Traffic Control Facility and provides traffic & boundary advisories and mission support services within R-2508 Complex shared use airspace. Responsibilities include:

- Providing traffic advisory service and boundary calls to the extent possible to all aircraft operating within the R-2508 Complex, depending on higher priority duties of the controller.
- JCF does not provide separation services to aircraft operating within the R-2508 Complex; operations in Complex airspace are on a “see-and-avoid” basis.
- Providing ATC services to non-participating IFR aircraft transiting the R-2508 Complex with respect to known activities on a non-interference basis.

3.2. Reporting Suggestions for General Complex Changes (R-2508 Situation Report)

The R-2508 Situation Report (SITREP), **Attachment 1**, provides R-2508 Complex users, controllers, and other interested parties with an informal method to identify and report circumstances or services that enhance or degrade their mission within the R-2508 Complex. The SITREP provides R-2508 Complex management with informal user feedback and points out the positive aspects or needed changes to operating policies and procedures. Support by R-2508 Complex users is vital for this program to be effective. SITREP reviews may include playback of Air Traffic Control radar and audio data. The FAA can only provide this data within 15 days of the occurrence, therefore timely submission of SITREPs is critical to improve policies, procedures, and ensure continued safe operations within the R-2508 Complex.

- The information contained in the SITREP is for Local Use ONLY and for the exclusive purpose of improving air operations within the R-2508 Complex. The information (call signs and crew names) contained within the SITREP SHALL NOT be released.
- This form does not replace formal reporting procedures such as the Hazardous Air Traffic Report (HATR), Operational Hazard Report (OHR), Hazard Reports (HAZREPS) or Near Mid-Air Collision Report (NMAC), nor does it address situations that will be reported and handled as flight or controller violations.
- To submit a SITREP, Submit the information via the R-2508 SITREP form located at http://www.edwards.af.mil/Home/R-2508 and https://usaf.dps.mil/teams/12162
- CCF will notify the submitter upon receipt, process the report for situation analysis and

recommendations, and submit the report and findings to the CCB.

- The CCB will assign appropriate action for each situation

Chapter 4: General Operating Procedures for R-2508 Complex

4.1. General Complex Information: The Joint Policy and Planning Board (JPPB) is chartered by the DoD to act as the overarching and policy body for the R-2508 Complex. All JPPB sponsored units operating within the R-2508 Complex shall receive an annual R-2508 Complex briefing on Complex Operations and Procedures from the R-2508 Central Coordinating Facility (CCF) or their sponsoring JPPB Commander (e.g. Navy/Marine Corps units are sponsored by the Commander, NAWCWD). The R-2508 brief will address scheduling procedures; safety concerns, and overflight sensitivities. Annual briefings are normally conducted March thru April each year. Additionally, CCF provides airspace briefings for special/large scale operations on an as needed basis.

NOTE: Commanders of units flying in the R-2508 Complex are responsible for ensuring their aircrews are briefed annually on R-2508 Complex procedures.

- Users include participating aircraft transiting the airspace to installations located within the R-2508 Complex.
- Civilian aircrews operating under an R-2508 Complex Letter of Agreement (LOA) are required to comply with the briefing requirements and operating procedures defined herein, except as modified by the terms of the LOA.
- Any JPPB sponsored unit that hosts a transient unit will be responsible for that transient unit's compliance with R-2508 Complex Operations and Procedures.
- Only JPPB sponsored activities that have received the annual R-2508 Complex brief will be allowed to schedule missions in the Complex.

4.1.1. R-2508 CCF Hours of Operation: CCF hours of operation are 0600 – 1800 (local times) Monday through Friday, and closed Federal holidays and weekends. Outside of published hours CCF can be contacted on the after-hours phone at (866) 805-2851.

4.2. Scheduling Process: R-2508 Complex scheduling requirements apply to all Complex flight activities, including special operations and large-scale exercises. CCF is the designated airspace management and scheduling authority for the R-2508 Restricted Area, Military Operations Areas (MOAs), and Air Traffic Control Assigned Airspace (ATCAAs). CCF coordinates mission requirements of all R-2508 Complex users to ensure optimum airspace utilization and safety.

NOTE: Military units requiring use of R-2508 Complex airspace must comply with scheduling

requirements established in OPNAVINST 3710.7, AFI 13-201, U.S. Army AR 95-1, FLIP, and this User's Handbook.

4.2.1. Airspace Scheduling: Airspace is either activated for military use or released for joint use. When R-2508 Complex airspace is activated for military use, it is reserved as scheduled. When Complex airspace is not scheduled, it is released to the Federal Aviation Administration (FAA) for Joint-Use.

When scheduling airspace:

- Request only those areas and altitudes necessary for mission completion. Additional areas and altitudes may be requested in flight, if required, contingent upon the status of the airspace (activated for military use or released for joint use).
- CCF must have 2 hours notice to reactivate MOA airspace. Joshua Approach (FAA) will NOT issue a work area clearance when airspace is released for joint use.
- Schedule any weekend and holiday operations through CCF during normal CCF operating hours, M-F 0600-1800 Local (excluding Federal holidays) at 661-277-2508 DSN 527-2508.
- Changes in area that require activation of additional MOA airspace must be made at least 2 hours in advance to activate the airspace.

NOTE: Joshua Approach is not authorized to schedule or activate any R-2508 Complex Airspace. Advanced scheduling is required through CCF.

4.2.2. Aircraft Scheduling: To schedule aircraft in the R-2508 Complex: 2508ccf@us.af.mil

4.2.2.1. Submit the R-2508 **Complex Airspace Request Form** for normal weekday events to CCF by 1600 (local) one working day prior to the date of intended use.

4.2.2.2. Submit the R-2508 Complex Airspace Request Form for **weekend or holiday period events** to CCF by 1600 (local), the last CCF work day prior to the event.

Information shall include:

- Aircraft Call Sign (not to exceed seven characters)
- Number/Type aircraft
- ZULU Date of Mission
- Estimated time of entry (in ZULU) into Complex airspace
- Estimated delay within Complex airspace (1+00, 1+30 etc.)
- Altitudes (highest altitude required for mission or altitude block)
- Departure/Arrival airport
- Requested and/or approved airspace. Indicate work areas (MOAs/ATCAAs) and any internal

restricted areas scheduled through appropriate using agencies. NOTE:

- Remarks:
    - Type mission/activity to be conducted
    - Any MTRs, low-level or navigation routes that affect R-2508 Complex airspace.
    - Any special activities (e.g. NVG/NVD, ECM, AAR, LIGHTS OUT, etc.)

NOTE: Aircrews are responsible for scheduling Internal Restricted Areas with appropriate Using Agency. Additionally, aircrews are responsible for scheduling the use of IR/VR routes of intended use with the appropriate route scheduling agency.

Airspace Request Form Abbreviations (and CCF 24-HR Schedule)

BAKERSFIELD MOA/ATCAA	BK	SHOSHONE MOA	SH
BARSTOW MOA	BA	SHOSHONE NORTH ATCAA	SHN
BARSTOW EAST ATCAA	BAE	SHOSHONE SOUTH ATCAA	SHS
BARSTOW WEST ATCAA	BAW	ISABELLA REFUEL AREA	ARISB
BISHOP MOA	BI	SHOSHONE REFUEL AREA	ARSHN
BUCKHORN MOA/ATCAA	BH	COALDALE REFUEL AREA	AROAL
DEEP SPRINGS ATCAA	DS	LINUS REFUEL AREA	ARLNS
ISABELLA MOA/ATCAA	I	PANCHO 3	P3
OWENS MOA/ATCAA	O	SAGE 2	S2
SALINE MOA/ATCAA	S	WAR 2	W2
PANAMINT MOA/ATCAA	T	GOLDEN TRIANGLE	GT
PORTERVILLE MOA/ATCAA	PV		
BLACK MOUNTAIN SUPERSONIC			BMSS
HIGH ALTITUDE SUPERSONIC			SS

4.2.2.3. Additions, Changes, and Cancellations: Add-ons, call sign changes, or time slips shall be coordinated with CCF. Any uncoordinated changes of more than 30 minutes before or 60 minutes after previously scheduled times are considered unscheduled events and may be denied entry.

- If changing previously scheduled events after CCFs normal working hours (0600-1800 M-F) contact CCF duty Airspace Manager at: (866) 805-2851.
- Changes that require activation of additional airspace must be made at least 2 hours prior to activate the airspace.

NOTE: Notification of cancellations is required to ensure proper management and release of Complex airspace for joint use.

4.2.2.4. Center Scheduling Enterprise (CSE).

- CCF will accept CSE generated airspace requests in lieu of R-2508 Complex Airspace

Request Forms for **412 TW (including Plant 42) only**. ***NOTE: CSE generated airspace requests with missing call signs, incorrect altitudes for associated airframes, etc., will not be accepted by CCF.***

- CCF will not accept CSE generated airspace requests in lieu of R-2508 Complex Airspace Request Forms for aircraft with departure points other than KEDW or KPMD

4.2.3. Unscheduled Aircraft. Participants failing to comply with scheduling policies may be restricted from entry/operating within R-2508 Complex airspace.

4.2.4. Transitioning Participating Aircraft: Participating aircraft that have filed a flight plan to land at Naval Air Weapons Station (NAWS), China Lake or Edwards Air Force Base must schedule with CCF. Failure to do so will cause the aircraft to be considered as unscheduled.

4.3. Complex Scheduling Agencies: Units planning operations in R-2508 Complex airspace should be prepared to coordinate and schedule through one or more of the following agencies that have scheduling and operational control.

4.4. Special Activities.

4.4.1. Scheduling Special Activities: Unless otherwise coordinated, requests for special activities must be submitted IAW this section. Lead time is required to allow all necessary coordination/changes to be approved prior to the scheduled operation.

- Lead times and approval requirements are required to allow other units to be briefed on the operation (times, routes, altitudes, activities, etc.) and de-conflict the proposed operation from other activities within the Complex.
- See Appendix B: Mission Planning Checklist, to simplify coordination with CCF for Special Activities for missions involving more than 10 aircraft.

4.4.2. Lights Out Operations within R-2508 normally require units to establish a Letter of Procedure (LOP) with the Complex Control Board (CCB). Units requesting to conduct “Lights Out” operations within R-2508 shall provide two (2) working days prior notification for one-time use or IAW established LOP for recurring “Lights Out” operations. Aircrews shall advise the controlling facility when commencing and terminating “lights out” operations. Aircrews shall leave aircraft position lights ON while transiting to and from the scheduled restricted area. Turn lights OFF only when authorized by ATC.

NOTE: A waiver to 14 CFR Part 91.209 is unnecessary if the aircraft is operating in a restricted area in compliance with the using/scheduling agency’s rules of operation for that internal restricted area.

4.4.3. Electronic Counter Measures/Chaff: For activities using electronic counter measures (ECM) (jamming and/or chaff) in the R-2508 Complex, you must pre-coordinate with and obtain approval from appropriate Base Spectrum Managers. Users must inform CCF about these activities by indicating the activity in the remarks section of the airspace request form.

Spectrum Managers	**DSN**	**Commercial**
WAFC, Pt. Mugu	**351-7983**	**(805) 989-7983**
412 TW, Edwards AFB	**527-2390**	**(661) 277-2390**
NAWCWD, China Lake	**437-6827**	**(760) 939-6827**
National Training Center, Fort Irwin	**470-3043**	**(760) 380-3043**

4.4.4. Flares: Flare use is limited to internal restricted areas only. Flare use must be coordinated with the appropriate restricted area's scheduling agency.

4.4.5. Refueling Areas: The R-2508 Complex has four "unpublished" refueling areas (see Figures 4-1 & 4-2). These areas are available for use and must be scheduled directly with the CCF or thru 412th Current Ops Scheduling NLT 1600L day prior to mission.

NOTE: Refueling areas are not protected, and "See and Avoid" procedures apply.

Area	**Entry**	**Outbound**	**Latitude**	**Longitude**
ISABELLA (ARISB)	**PMD 345°/ 35**	**PMD 345R, left turns**	**35°13'N**	**118°04'30"W**
COALDALE (AROAL)	**OAL 155°/ 60**	**OAL 155R, left turns**	**37°00'N**	**117°33'W**
SHOSHONE (ARSHN)	**BTY 150°/ 60**	**BTY 150R, left turns**	**35°50'N**	**116°26'W**
LINUS (ARLNS) Green Flag West Only	**N35°57.53 W117°02.81**	**Left Hand Turns Between**	**N35°57.53** **N36°02.15** **N36°19.88** **N36°15.35**	**W117°02.81** **W116°51.46** **W117°03.45** **W117°14.59**

Figure 4-1: R-2508 Complex Refueling Areas

NOTE: Tankers flying in support of Green Flag West operations schedule directly with the 549th CTS scheduling office at Nellis AFB, DSN 682-8570, Fax DSN 682-4274.
No radar coverage is available below 10,000 MSL for ARSHN or AROAL.

Figure 4-2: Linus Refueling Area – Green Flag West Only

4.4.5.1. R-2508 Refueling Area Rules of Engagement.

- Always use the **“See-and-Avoid”** principle throughout your refueling operations.
- Refueling areas are **NOT exclusive-use airspace** and are **NOT protected** from other Complex aircraft operating in the area.
- **If you see a tanker formation that is not part of your operation, attempt to avoid the formation by at least 2,000 feet vertically and 5 miles laterally.** This distance is used to reduce the risk of incident due to emergency breakaways or maneuvers by the tanker formation.
- Conduct AAR operations within **ARISB at and above 21,000’ MSL** unless precluded by receiver aircraft operations or test requirements/limits. When conducting AAR at altitudes lower than 21,000’ MSL, aircrews should be cognizant of high speed fighter cross traffic between ROMOF and Superior Valley at or below FL200. **NOTE: Unless an operational necessity exists, aircrews should consider AROAL or ARSHN.**
- Standard AAR altitude blocks in ARISB: FL210B230, FL240B260, and FL270B290.

4.4.5.2. Discrete Tanker Beacon Codes: Tanker aircraft on active AAR missions will be issued discrete Mode 3 beacon codes by ATC to provide enhanced situational awareness to other R-2508 participants. The goal of this procedure is to afford those users not involved in AAR operations an increased opportunity to self-impose the 2,000’ vertical and 5 mile lateral buffer between themselves and active tanking formations. **NOTE: The below discrete beacon codes do not signify particular Refueling Areas or altitude blocks.**

- Tanker aircraft departing EAFB to conduct AAR within the R-2508 complex will be issued a code from the 0051-0057 series by SPORT MRU. Tanker aircraft will squawk the assigned discrete code throughout their mission in R-2508 Complex unless instructed otherwise by ATC.

- Tanker aircraft originating from outside the R-2508 Complex to conduct AAR within the R-2508 Complex will be issued a discrete beacon code from the 5253-5257 series by JOSHUA Approach upon entry. Tanker aircraft will squawk the assigned discrete code throughout the remainder of their mission in R-2508 Complex unless instructed otherwise by ATC.
- In addition to the above, 412 TW assigned and/or sponsored tankers are assigned Mode 1 squawk 02 and Mode 2 squawk 7210.

4.4.6. Supersonic Operations

- Supersonic flight is authorized in the High-Altitude and Black Mountain supersonic corridors (see Figure 4-3) when properly scheduled.
- Supersonic flight is not authorized in R-2508, MOAs, or ATCAAs unless approved by the CCB in advance. Supersonic operations may be conducted in other internal restricted areas after receiving approval from the appropriate scheduling agency.
- To schedule the supersonic corridors, contact the 412th Center Scheduling for same day operations at DSN: 527-3940, next day or future operations at DSN: 527-4110.

Figure 4-3: Supersonic Corridors

4.4.7. Tow Operations

4.4.7.1. Three categories of towed items are allowed within the R-2508 Complex:

- Category A: Items towed within 500 feet of towing aircraft
- Category B: Items towed between 500 feet and 1 statute mile from towing aircraft
- Category C: Items towed more than 1 statute mile from towing aircraft

4.4.7.2. Regardless of the category, all tow operations will be scheduled with CCF NLT 1600 day prior (coordination not needed if within 100 feet behind the aircraft). In addition, the pilot will notify the ATC facility or MRU on initial contact of intent to conduct tow operations.

4.4.7.3. The following rules apply to tow operations:

- Tow operations are only authorized in VMC conditions. Operations involving Categories A and B require advance notice to the CCF IAW Special Activities scheduling procedures. **NOTE: Night tow operations are limited to Category A only**.
- Category B tow operations are considered an additional hazard in the MOAs/ATCAAs and must use a chase aircraft. The chase aircraft must remain close enough to the towed item to provide a visual cue for non-participating aircraft that the towed object is between the chase and towing aircraft.
- Category C tow operations (or Category B operations where it is not feasible to use a chase

aircraft) **must** be approved by a Complex Control Board-recognized Safety Review Board (SRB) or Executive Review Board (ERB) (i.e., 412TW, NAWCWD, or NASA). Following the SRB/ERB assessment, the project must obtain CCB approval prior to flight. These operations also require coordination with CCF at least five (5) days prior to the mission being flown.

NOTE: If the towed object is inadvertently released, the towing aircraft shall notify the ATC facility or MRU immediately. User should consider avoiding populated areas within the Complex while conducting tow operations.

4.4.8. Airborne Radar Unit (ARU) and Airborne Warning and Control Systems (AWACS) Operations: Navy ARUs will coordinate their procedures and contingency plans with the Carrier Air Wing Strike Leader. Air Force AWACS will coordinate procedures and contingency plans with participating military units to ensure compliance by mission aircraft. ARU/AWACS must Schedule with CCF NLT 1600L day prior.

4.4.8.1. ARUs/AWACS shall:

- Provide mission frequency to JOSHUA that enables direct contact between JOSHUA and mission aircraft.
- Obtain orbit airspace to provide service to an exercise taking place within the R-2508 Complex.

  - Coordinate with CCF for orbits within R-2508
  - Receive a Work Area Clearance from Joshua for orbits inside the R-2508 Complex
  - Coordinate with CCF and appropriate ARTCC for orbits outside the R-2508 Complex
- Advise JOSHUA as soon as possible when an aircraft declares an emergency or encounters any unusual situation that requires any form of special handling.
- Initiate a radar correlation check.
- Maintain communications with Joshua on the appropriate ATC frequency or a pre-coordinated mission/tactical frequency (AWACS/ARU).
- Not provide air traffic control services to mission aircraft (e.g., IFR services, ATC clearances, etc.).
- Provide coordination for squawks and call signs for inbound/outbound mission aircraft.

  However, do not change the Mode 3 discrete beacon code assignment for mission aircraft working inside the R-2508 Complex. Flight split-off aircraft not assigned a Mode 3 discrete beacon code by Joshua may be instructed to squawk a non-discrete beacon code while in assigned mission airspace.
- Provide mission aircraft mission support.
- Provide Joshua with:
  - A 5-minute advance notice of mission completion

    - Call sign of the first element that has completed mission operations in the R-2508 Complex
    - Position of the last mission element that will exit the R-2508 Complex
- When mission is complete, advise mission aircraft to remain within assigned airspace and contact Joshua on the ATC frequency.

NOTE: All aircraft are operating within concurrent use airspace "See and Avoid" procedures apply.

4.4.8.2. JOSHUA Responsibilities:

- Perform all coordination with the appropriate ARTCC for inbound/outbound mission aircraft.
- Issue a Work Area Clearance and assign a Mode 3 discrete beacon code to mission aircraft.
- Forward mission aircraft radar data information to the AWACS/ARU to include:
    - Aircraft identification
    - Assigned discrete beacon code
- Inactively monitor the AWACS/ARU mission/tactical frequency.
- Provide traffic advisories, traffic alerts on non-mission aircraft operating in the R-2508 Complex, and boundary advisories on the mission/tactical frequency.
- Issue departure clearances and perform all associated ATC coordination with the appropriate ARTCC.

NOTE: Joshua will not provide advisories between mission aircraft.

4.4.9. Large Scale Exercises: Large Scale Exercises are those exercises involving more than 10 participating aircraft. All large-scale exercises using the R-2508 Complex must coordinate with CCF **at least 15 days in advance** of intended operations. Depending on the complexity, duration, and size of the exercise area, exercise planners should expect to meet one or more of the following conditions, as determined by the CCF:

- Provide scenario of exercise plan and airspace requirements to CCF via email and Joshua by e-mail or fax.
- Coordinate in advance with FAA (ARTCCs, Joshua), Military Representatives to FAA, CCF, and/or other special-use airspace agencies.
- Set up a mission briefing for all participating aircrews.
- Generate an operations plan covering detailed operating procedures to which the range agency and CCF will have direct input.
- Serve as special frequency management liaison.

NOTE: Mission planners are strongly encouraged to take advantage of CCFs extensive knowledge and experience in coordinating large-scale exercises in the R-2508 Complex. CCF can provide users with coordination requirements, FAA ATC and flight planning

requirements, and recommendations to achieve overall mission success. Early contact with CCF can prevent major changes to exercise plans.

Agency	Commercial
Air Force Representative to FAA Western-Service Area	**(206) 231-2500**
Navy Representative to FAA Western- Service Area	**(206) 231-2502 / 2503 / 2504**
Army Representative to FAA Western- Service Area	**(206) 231-2505 / 2506**
Los Angeles ARTCC Military Liaison	**(661) 265-8249**
Oakland ARTCC Military Liaison	**(510) 745-3334**
High Desert TRACON	**(661) 277-2023**

4.4.10. Remotely Piloted Aircraft (RPA) / Unmanned Aerial Systems (UAS) (see Figure 4-4)

- Operations within shared use airspace shall be conducted at or above 40,000 feet MSL.
- Transitions shall be conducted IAW approved transition routes at FL190 or FL200.
- CCF may authorize exceptions to this policy after 2200 local and on weekends dependent on other mission requirements.

Figure 4-4: Approved RPA/UAS Transition Routes

4.4.10.1. RPA/UAS Scheduling and Coordination: All RPA/UAS operations must be scheduled thru CCF and the applicable internal restricted area scheduling activity two (2) working days in advance. **NOTE: Does not apply to those operations outlined below.**

4.4.10.2. Real Time UAS Transitions between R-2505 and R-2524: UAS transitions between R-2505 and R-2524 are authorized directly across the Trona Corridor portion of R-2508. These transitions shall be coordinated between Joshua and ASC in real time and in accordance with procedures contained in the Joshua/ASC letter of agreement. In no case shall these transitions be conducted below FL190. The UAS shall comply with all other provisions of this handbook including the requirement to be mode 3 transponder equipped and in direct communication with, and under the control of, ASC/Joshua. The UAS shall not loiter in the Trona Corridor, or transition through any other portion of R-2508 without separate coordination and approval.

4.4.11. Laser Operations (non-eye safe): All non-eye safe laser operations require specific R-2508 CCB approval. Project officers should contact CCF well in advance and plan on conducting these missions on weekends, between 2200 and 0600 local, or above FL400.

4.5. Flight Planning:

- Refer to DoD FLIP for flight plan filing requirements. All aircrews filing to land or planning to operate in the Complex must understand and operate in accordance with the R-2508 Complex concept explained in Section 5.1.1 of this Handbook.
- All scheduled operations originating outside the R-2508 Complex shall file in accordance with the following procedures unless the flight will terminate at an installation within the

R-2508 Complex.

- These procedures shall be followed to ensure availability of an IFR clearance when flights are ready to RTB. Failure to comply may result in a delay in the Complex while Joshua Approach attempts to obtain an IFR clearance.

4.5.1. To File To/From R-2508 Complex.

4.5.1.1. File two (2) legs, one to enter and one to depart the R-2508 Complex. To ensure proper flight plan processing for Joshua Approach, flights not intending to land at an airport within the R-2508 Complex should file "R-2508" as the destination and point of departure for the return flight plan/leg.

4.5.1.2. **VFR Flights**. Aircraft landing or departing from an airport within the R-2508 Complex should file that airport as the destination and/or departure point of the flight plan.

4.5.1.3. **Complex Entry/Exit Points**. The point of entry/exit into R-2508 airspace should be an R-2508 Entry/Exit fix (see Figure 4-5) as listed in this section. This does not preclude ATC from clearing aircraft to enter/exit other R-2508 Complex boundary locations.

Sample DD Form 175 Military Flight Plan	DATE	AIRCRAFT CALL SIGN	AIRCRAFT DESIGNATION
	01/01/02	TEST 01	F-22/R

TYPE FLT PLAN	TRUE AIRSPEED	POINT OF DEPARTURE	PROPOSED DEPARTURE TIME (Z)	ALTITUDE	ROUTE OF FLIGHT	TO	ETE
I	450	NFL	1900	290	OAL..EWALD	R-2508	0+15
I	450	R-2508	2000	290	EWALD..OAL	NFL	0+15

NOTE: Filing a flight plan does not relieve the aircrew of the responsibility for scheduling the appropriate airspace with CCF.

4.5.2. VFR Flights in R-2508 Complex.

- Obtain a Work Area Clearance from Joshua Approach/SPORT before conducting operations in the R-2508 Complex.
- All Complex aircraft shall advise Joshua Approach/SPORT before departing R-2508 Complex airspace.

4.5.3. R-2508 Complex Entry/Exit Points

Figure 4-5: R-2508 Complex Entry/Exit Points

NOTE: NID TACAN is unmonitored when China Lake Airfield is closed.

Chapter 5: R-2508 Flying Procedures

5.1. Flying Procedures: All users must understand and comply with R-2508 Complex procedures.

5.1.1. Participating Aircraft: “Participating aircraft” are aircraft under the command of, or sponsored by, the Navy, Air Force, or Army members of the R-2508 Joint Policy and Planning Board (JPPB), and civilian aircraft under Letter of Agreement with the R-2508 Complex Control Board (CCB), whose flights require operations above FL180.

NOTE: Civilian flights in the R-2508 Complex that will remain below FL180 (18,000 MSL) for the entire mission are not considered participating aircraft.

5.1.2. Contract Civil Aircraft MOA Operations: In order to schedule a contract civil aircraft to operate in the R-2508 Joint Use Airspace below FL180, the aircraft must be:

- Sponsored by a JPPB command,
- Briefed to operate in the R-2508 Complex,
- Scheduled with the R-2508 CCF.

It is the sponsoring commands responsibility to ensure the aircraft is in accordance with all legal contractual rules and regulations. If the contract aircraft requires flight above FL180, R-2508 policy requires a Letter of Agreement with the R-2508 CCB.

5.1.3. Non-Participating Aircraft: "Non-participating aircraft" are defined as aircraft that cannot comply with the terms of the R-2508 Complex procedures. These aircraft shall be provided IFR services, as specified in FAA JO 7110.65, on a non-interference basis, and can expect to encounter delays.

5.1.4. Specific Procedures: These procedures apply to participating aircraft operating within R-2508 Complex. **NOTE: All participating aircraft within R-2508, MOAs, or ATCAAs shall operate in VMC**.

5.1.4.1. Unable to maintain VMC:

- Aircraft shall notify Joshua Approach and request an IFR clearance.
- The purpose of an IFR clearance is to position the aircraft in weather conditions that permit VFR flight, to exit the area, or to return to base if unable to locate VMC conditions.
- After re-encountering VMC conditions, the aircrew shall be responsible for canceling IFR clearance.

5.1.4.2. "See and Avoid" Concept: Scheduling or receiving a clearance to operate within the R-2508 Complex does not constitute exclusive use of the area. Those operations requiring exclusive use will normally be conducted within internal restricted areas.

5.1.4.3. Mode C: All participating aircraft operating in the R-2508 Complex are required to have an operational transponder and Mode C, unless otherwise pre-coordinated.

- All aircraft shall remain on the assigned transponder code while operating in the R-2508 Complex unless otherwise directed.
- The flight lead for standard formation flights shall squawk normal and wingman should squawk standby.
- Upon breakaway into elements or individual flights, the element lead or individual aircrew shall set the transponder in accordance with the following:
  - Advise ATC/MRU of the breakaway elements' call sign(s), number and type of aircraft, and request beacon code assignment.
  - Advise ATC/MRU if traffic calls are required between elements.

5.1.4.4. Traffic Advisories: Aircrews shall accept traffic advisories from Joshua Approach, China Control, or SPORT unless otherwise coordinated. Controllers shall issue traffic advisories, safety alerts, and boundary calls.

- Aircraft operating in support of **R-2505, R-2506 or R-2524** operations will normally be provided radar advisory services by **China Control**.
- Aircraft operating in support of **R-2515** operations will normally be provided radar advisory service by **SPORT**.
- Aircraft operating in support of **R-2502** operations will normally be provided traffic advisory service by **Desert Radio**. Aircraft operating in support of Green Flag Operations within **R-2502** will normally be provided traffic advisory service by **Sundance** when operational.

NOTE: Flights shall maintain two-way radio communications with the Controlling ATC Facility/MRU on the appropriate frequency unless otherwise coordinated. Carry out intra-flight communications on a secondary frequency.

5.1.4.5. Area Transitions. Aircraft transiting across working areas shall**:**

- Avoid aircraft actively conducting test or training whenever possible.
- Once inside R-2508, transiting aircraft should plan on traveling around or over active flights by flying near area boarders and/or near the top of the area at VFR hemispheric altitudes when practical.

5.1.5. Operating Procedures: These procedures apply to all aircraft operating within R-2508 Complex.

5.1.5.1. Pilot Check in Procedures: All flights shall contact Joshua Approach prior to Complex entry and exit. Initial contact shall include a request for a Complex Clearance and altitudes.

During check-in, pilots should state their intentions and planned work area using plain language. Work load permitting, Joshua Approach should respond with relevant traffic information for the flight. Avoid stepping on other transmissions during high workload time periods.

Work Area	Frequencies
JOSHUA APPROACH (Primary Frequency)	**348.7 / 133.65**
ISABELLA	**335.6 / 134.05**
OWENS	**322.3 / 126.55**
SALINE	**256.8 / 123.95**
PANAMINT	**291.6 / 120.25**

5.1.5.2. R-2508 Complex Clearances: Joshua will issue appropriate Complex Clearance to allow flights to operate VFR in the R-2508 Complex and will normally be given in an abbreviated format as follows:

SAGE 2 Clearance: Specifies a clearance to operate within the Isabella**,** Owens, Saline, and Panamint Work Areas at and below FL290. Aircraft shall schedule higher altitudes when required and request real time with Joshua Approach.

PANCHO 3 Clearance: Specifies a clearance to operate within the Isabella and Panamint Work Area at and below FL500, and the Owens and Saline Work Areas at and below FL290. Aircraft shall schedule higher altitudes when required and request real time with Joshua Approach. The following restrictions apply:

- **Only locally based aircraft** (Edwards AFB, China Lake, Palmdale [Plant 42]), and NAS Lemoore are authorized to use a PANCHO 3 Clearance.

WAR 2 Clearance: Specifies a clearance to operate in the Saline and Panamint Work Areas at and below FL290, Shoshone MOA, and the Shoshone North and South ATCAAs at and below FL230. If requested, and scheduled for higher altitudes in the Shoshone North and South ATCAAs, pilots may expect clearance to those altitudes on a real-time basis. The following restrictions apply:

- ONLY aircraft scheduled through Green Flag West and operating in support of NTC Fort Irwin rotational exercises are authorized a **WAR 2 Clearance.**
- It is the responsibility of the pilot in command to ensure proper scheduling and know the appropriate procedures for entry into R-2502N/E, R-2505, R-2515, and R-2524.
- Aircrews must request SHOSHONE NORTH & SOUTH real time with Joshua Approach on initial check-in to activate.

NOTE: Aircrews are responsible for remaining within the vertical and lateral confines defined by the clearance. If the aircraft leaves the vertical or lateral confines of the clearance, a flight violation may be filed. Aircrews issued clearance altitudes lower than mission requirements must request higher altitudes from Joshua Approach.

5.1.5.3. Local Altimeter Setting: Aircraft shall remain on the assigned local altimeter while operating in the R-2508 Complex, regardless of altitude**.** The facility altimeter to use in specific areas is included with the information about each area (see Chapter 2).

5.1.5.4. Departing Complex VFR: Participating aircraft departing the R-2508 Complex shall maintain VFR until crossing the R-2508 Complex boundary.

5.1.5.5. Enroute Clearances: Flight crews are responsible for obtaining an enroute clearance prior to departing Complex boundaries IFR. If departing VFR, advise Joshua Approach.

5.1.5.6. IFR/VFR Separation: Joshua Approach is not responsible for providing IFR separation between participating IFR and VFR traffic operating in the R-2508 Complex. Joshua Approach shall provide IFR separation between all IFR participants and those non-participating aircraft operating on an IFR clearance.

5.1.5.7. Active/Inactive Monitoring: Active and inactive monitoring of mission frequencies depends on availability of radio resources at Joshua Approach.

- **Active Monitoring:** Joshua Approach tunes the transceiver to the mission frequency requested, listens on the frequency, and makes traffic/boundary calls on mission frequency.
- **Inactive Monitoring:** Joshua Approach tunes transceiver to mission frequency requested, but does NOT listen on frequency. Traffic and boundary calls will be made on mission frequency as needed. Direct pilot-to-controller communications requires the pilot to switch to an ATC frequency.

5.1.5.8. Air Combat Maneuvers (ACM): When using maneuvering areas for ACM or any other mission requiring extensive maneuvering, advise Joshua Approach of the area.

- When conducting ACM, aircrews should be aware of noise-sensitive areas that must be avoided to the maximum extent possible.
- Be aware that low-level flying activities are conducted at altitudes below the radar horizon and in areas with marginal communications coverage. This reduces the ability of Joshua Approach to provide traffic advisories

When transiting to work areas or RTB, make every effort to use ridgeline transit routes and/or fly below 5,000 feet AGL to de-conflict with possible maneuvering activities.

5.2. Low-Level Flying: Aircraft operating below 1,500 feet AGL (including MTR's) within or transitioning the R-2508 Complex work area airspace shall monitor and provide position reports on frequency 315.9 MHz. This frequency assists aircrews in avoiding conflicts with other aircraft operating low-level below radar coverage. Pilots are required to check in on the appropriate ATC frequency with Joshua Approach and request change to the low-level frequency. This frequency is used in the same manner as a UNICOM with pilots broadcasting their position and intentions as they progress through the area. Aircrews shall also check out on an ATC frequency with Joshua Approach when exiting the low level environment. Dual radio aircraft shall continue to monitor appropriate ATC or mission frequency.

NOTE: Frequency 315.9 is NOT monitored by Joshua Approach

5.2.1. GEO Reference Points (see Figure 5-1**):** The following GEO reference points apply to aircraft operating low level in the R-2508 Complex and are used to communicate aircraft position on frequency 315.9.

Figure 5-1: GEO Reference Points

OWENS VALLEY	N LAT	W LONG
TINEMAHA RESV. "T-DAM"	N 37 03 41.50 / N 37 03.692	W 118 13 10.80 / W 118 13.180
INDEPENDENCE	N 36 48 54.79 / N 36 48.913	W 118 12 15.41 / W 118 12.257

LONE PINE	N 36 35 25.35 / N 36 35.423	W 118 02 47.25 / W 118 02.788
OWENS LAKE BED	N 36 21 32.90 / N 36 21.548	W 117 57 46.90 / W 117 57.782
SALINE VALLEY		
EUREKA DUNES	N 37 05 58.00 / N 37 05.967	W 117 40 22.00 / W 117 40.367
NUDY CAMP	N 36 48 17.80 / N 36 48.297	W 117 46 25.20 / W 117 46.420
SADDLE	N 36 32 02.40 / N 36 32.040	W 117 33 41.60 / W 117 33.693
DEATH VALLEY		
NORTH DEATH	N 36 58 00.00 / N 36 58.000	W 117 21 00.00 / W 117 21.000
STOVE PIPE	N 36 36 23.00 / N 36 36.383	W 117 08 47.00 / W 117 08.783
PANAMINT VALLEY		
STARWARS CANYON	N 36 21 48.80 / N 36 21.813	W 117 30 32.30 / W 117 30.538
DOGBONE	N 36 23 13.80 / N 36 23.230	W 117 24 18.10 / W 117 24.302
BALLARAT MINES	N 35 56 43.30 / N 35 56.722	W 117 12 02.05 / W 117 12.034
TRONA AIRFIELD	N 35 48 44.20 / N 35 48.737	W 117 19 37.70 / W 117 19.628
ISABELLA		
LAKE ISABELLA	N 35 39 00.00 / N 35 39.000	W 118 23 00.00 / W 118 23.000
NEEDLES	N 36 07 00.00 / N 36 07.000	W 118 29 00.00 / W 118 29.000
INYOKERN AIRFIELD	N 35 38 00.00 / N 35 38.000	W 117 50 00.00 / W 117 50.000
RACE TRACK	N 35 16 17.80 / N 35 16.297	W 117 57 30.90 / W 117 57.515
MOJAVE	N 35 03 00.00 N / 35 03.000	W 118 08 00.00 / W 118 08.000
R2505		
COSO SAM	N 36 12 24.37 / N 36 12.410	W 117 21 00.00 / W 117 43.260
AIRPORT LAKE	N 35 54 06.66 / N 36 54.110	W 117 42 57.01 / W 117 42.950
R2515		
CUDDYBACK	N 35 17 00.00 / N 35 17.000	W 117 28 00.00 / W 117 28.000

HARPER LAKE	N 35 01 00.00 / N 35 01.000	W 117 16 00.00 / W 117 16.000
R2524		
CHARLIE AIRFIELD	N 35 35 00.00 / N 35 35.000	W 117 02 52.83 / W 117 02.880

SUPERIOR VALLEY	N 35 17 21.08 / N 35 17.350	W 117 06 15.10 / W 117 06.250
VENTURA	N 35 16 00.00 / N 35 16.000	W 117 01 00.00 / W 117 01.000

5.2.2. SIDEWINDER LOW LEVEL (SWLL) (see Figures 5-2 & 5-3): The Sidewinder Low Level Route (Rev 2) with JEDI Transition was developed to standardize low level training for DoD operations within the R-2508 Complex and is for local use only. This route is not a published military training route (MTR).

- All points will be flown sequentially, i.e. A, B, C…M or C, J, K…M, etc.
- Opposite direction flight is prohibited.
- Aircrews must comply with R-2508 Complex noise sensitive area requirements IAW paragraph 2.24 of this handbook.
- Aircrews entering the Sidewinder LL via Point A must avoid Lake Isabella and surrounding communities.

- **NOTE: Frequency 315.9 is NOT monitored by Joshua Approach**

Figure 5-2: Sidewinder Low Level Route

Figure 5-3: Sidewinder Low Level Special Operating Procedures

5.3. Special Considerations:

5.3.1. Open Skies Treaty Flights:

- Treaty provisions state that Open Skies flights take precedence over regular air traffic and allow flights through all Special Use Airspace.
- CCF is the single point of contact to Joshua Approach, users, and Controlling Agencies for notification of proposed Open Skies flights in the R-2508 Complex. Upon notification, CCF will advise users/agencies of the intended flight path through Complex airspace.
- All users and agencies should be prepared to review and, if necessary, modify their flight requirements for R-2508 Complex airspace based on the proposed overflight window.
- Notice of the actual times and airspace affected by the Open Skies flight plan will be identified by CCF as those details become available.

5.3.2. Green Flag West:

Figure 5-4: Green Flag West

- **IFR Departure Routing… via FYTTR…BTY 100/30…TUCKY**
- **IFR RTB Routing… via TUCKY…BTY 100/30…STRYK**
- **LSV VFR Departure Routing FYTTR…Eagle Mountain**
- **LSV VFR RTB Routing Eagle Mountain…JAYSN…STRYK**
- **Refueling Area LINUS (ARLNS) 20 - 24K' (See also Figures 4-1, 4-2, 5-4)**
- **CP Pine CAS Orbit Hold at 21K' then operate 20K' to 200 AGL in Owens MOA/ATCAA outside of Sequoia and Kings Canyon National Parks.**

Appendix A: Glossary of Abbreviations, Acronyms, and Terms

Item	Meaning
AAF	Army Air Field
ACM	Air Combat Maneuvering
AFB	Air Force Base
AFTC	Air Force Test Center
AGL	Above Ground Level
ANG	Air National Guard
ARTCC	Air Route Traffic Control Center
ARU	Airborne Radar Unit
ASC	Airspace Surveillance Center
ATC	Air Traffic Control
ATCAA	Air Traffic Control Assigned Airspace
AWACS	Airborne Warning and Control System
BFM	Basic Fighter Maneuvers
CCB	R-2508 Complex Control Board
CCF	R-2508 Central Coordinating Facility
CFA	Controlled Firing Area
CFR	Code of Federal Regulations
DoD	Department of Defense
DSN	Defense Switching Network
ECM	Electronic Counter Measures
FAA	Federal Aviation Administration
FL	Flight Level
FLIP	Flight Information Publication
GP	General Planning
HATR	Hazardous Air Traffic Report
IAW	In accordance with
IFR	Instrument Flight Rules
JPPB	R-2508 Joint Policy and Planning Board
LOA	Letter of Agreement
MOA	Military Operations Area
MRU	Military Radar Unit
MSL	Mean Sea Level
MTR	Military Training Route
NACC	NTC Airspace Control Center
NAS	Naval Air Station
NAWCWD	Naval Air Warfare Center, Weapons Division
NAWS	Naval Air Weapons Station
NM	Nautical Miles
NMAC	Near Mid-Air Collision Report
NOTAM	Notice to Airman
NTC	National Training Center
NVD	Night Vision Device

OHR Operational Hazard Report
OT&E Operational Test and Evaluation
PPR Prior Permission Required
RDT&E Research, Development, Test, and Evaluation
RTB Return to Base
SAM Surface-to-Air Missile
SAR Special Access Required
SFC Surface
SRB Safety Review Board
SUA Special-Use Airspace
TFR Temporary Flight Restriction
TRACON Terminal Radar Approach Control
TW Test Wing
UAS Unmanned Aerial System
UHF Ultra-High Frequency
VFR Visual Flight Rules
WAFC 412TW Western Area Frequency Coordinator

Appendix B: Large Scale Exercise Planning Checklist

This checklist helps planners prepare for a large-scale exercise. The guidance is given as follows:

B.1 At Least 15 Calendar Days from Operations
B.2 At 7 Calendar Days from Operations
B.3 At 3 Working Days from Operations
B.4 At 1 Working Day from Operations

B.1. At Least 15 Calendar Days from Operations: With at least 15 calendar days until your intended operations, you should be on your way to planning the exercise.

B.1.1. Initiate Planning and Coordination

- Assign a single point-of-contact to represent your mission. Forward this information to CCF and other concerned agencies.
- Provide the Exercise Planner with a copy of this checklist and attached quick-reference "Users Exercise Planning Checklist". These checklists will help planners ensure they get the required coordination and that they meet all exercise data requirements.
- Prepare the initial plan. This information will be used to prepare a briefing sheet to be distributed to Joshua Approach and R-2508 Complex users. Include:
  - Desired airspace areas and altitudes
  - Date and time periods (and backups, if applicable)
  - Basic scenario with ingress/egress routes, tanking, adversary, and control and communication procedures
  - Other information that pertains to operational requirements (i.e., GCI support)
- Ensure all participants are authorized to operate in accordance with R-2508 Complex operating procedures (see Chapters 2 through 5).
- Determine frequencies to be used and coordinate with CCF, FAA facilities, and range agencies.
- Coordinate check-in/check-out procedures with appropriate FAA facilities.
- Check for other agencies that may require advance coordination (i.e., FAA ARTCCs, Military representatives to the FAA, Frequency Coordinators).
- Call the range facility early to identify range requirements. Advance notice and information required may vary between scheduling agencies and types of missions.
- Coordinate with CCF and required range agencies for basic exercise and range requirements. Ensure all exercise plan changes are coordinated with appropriate agencies throughout the duration of the exercise.
- Coordinate check-in/check-out procedures for the R-2508 Complex in advance with Joshua Approach.
- If determined necessary, send a brief exercise initial plan to the CCF. If revisions are required, revise the plan and brief the CCF or appointed representative.

B.1.2. Preparing the Plan. When preparing the plan, be sure to include the following:

- R-2508 Complex entry/exit points, altitudes, and routing within the Complex
- Check-in/check-out procedures for the R-2508 Complex
- Tanker locations, altitudes, and frequencies
- AWACS/E-2/designated comm. aircraft location, altitude, and frequency. If no AWACS/E-2 is available, designate a communications aircraft.
- ECM aircraft positions
- Designated ACM areas
- All exercise frequencies, call signs, and squawks

NOTE 1: Communications aircraft must request and receive a Complex Clearance from Joshua Approach before entering the R-2508 Complex.

NOTE 2: Immediately submit changes to CCF. Last-minute changes to the plan may not be approved due to lack of coordination time.

B.1.3. Tips for Initial Planning and Coordination:

B.1.3.1. Avoid the following when planning the exercise:

- Do not place refueling or other anchor/orbit points too close to Complex boundaries. There are three non-published refueling areas available for use within the Complex (see Figure 4-1).
- Avoid noise sensitive areas, National Parks, and low-altitude routes in these same areas (see Chapter 2*).*
- Do not place anchor points in areas of concentrated activities such as Owens Dry Lake, Saltdale, or the Trona Corridor.

B.1.3.2.Your planning and coordination will be smoother if you also keep in mind the following:

- Existing restrictions (such as National Park over-flight altitudes) are in place to help preserve our use of the Complex to fulfill missions and to protect other interests in the area. Do not request deviations to existing restrictions.
- Do not expect to receive segregated airspace outside of the internal restricted areas.
- Do not expect to receive clearance for unrestricted ACM. Generally, ACM can be conducted in Owens, Saline, or Panamint (see Figure 2-1).
- Expect transit corridor restrictions to be imposed to allow other users access to the work areas without conflicting with exercise ACM activity.

B.1.3.3. If the exercise activity centers around:

- R-2505/Coso Range: Plan on requesting Isabella, Owens, Saline, and/or Panamint. If Panamint is required, plan to conduct ACM north of 36°08’N and remaining west of Telescope Peak (36°08’N and 117°05’W).

- R-2524: Request to have ACM activity in Panamint south of 36°08’N and west of Telescope Peak.
- R-2502N (Leach Lake): Request ACM activity in Panamint south of 36°08’N and east of Telescope Peak.

NOTE: Call or send a message to the scheduling agencies with jurisdiction over planned use restricted areas/ranges and airspace to validate coordinated requirements.

B.2.At 7 Calendar Days from Operations: Have your exercise representative brief the approved exercise plan in advance to CCF. Invite range and ATC representatives from China Lake ASC, Edwards AFB SPORT, and Joshua Approach, as appropriate.

B.3.At 3 Working Days from Operations:

- Finalize the exercise plan by defining operational requirements in the R-2508 Complex. Coordinate this plan with CCF and request any additional assistance needed.
- Brief representatives from each participating unit on exercise procedures prior to their strike/tactics planning.
- Plan to have at least one representative from CCF and appropriate agencies brief participating aircrews on airspace and range procedures and concerns.

B.4. At 1 Working Day from Operations: At least 1 working day before the start of operations, submit final call signs, number and type aircraft, squawks, and changes to CCF.

NOTE: Changes other than minor (i.e., call sign, number and type aircraft, and time changes) will normally not be accepted after this time.

Attachment 1: R-2508 Situation Report

R-2508 SITUATION REPORT	**DATE RECEIVED:**	
FROM: **(OPTIONAL)**	TO: **R-2508 Central Coordinating Facility, 100 E. Sparks Dr. Edwards AFB CA 93524-8090 DSN: 527-2508 or 2508ccf@us.af.mil**	DATE OF REPORT:

This form is intended for the reporting of circumstances/services that enhance or degrade the users' mission within the R-2508 Complex. It may be used by aircrews or controllers to submit any constructive information to improve the safety and efficiency of aviation operations in the R-2508 Complex. Identification of the drafter is optional. This form will Not be used to replace reporting of situations that require submission of Hazardous Air Traffic reports (HATR), Operational Air Hazard Reports (OHR), or Near Mid-Air Collision (NMAC) reports. This report should be submitted within 5 days of the incident to ensure availability of the data necessary to analyze the reported situation. The information contained on this form is for MILITARY OFFICIAL USE ONLY and will be used for the exclusive purpose of improving safety and operations within the R-2508 Complex. No punitive or disciplinary action will be taken as a result of statements made on this form.

DATE/TIME SITUATION OCCURRED:	LOCATION SITUATION OCCURRED:
CALLSIGN(S) / TYPE AIRCRAFT:	OTHER AIRCRAFT INVOLVED:
FREQUENCY(IES):	OTHER CALL SIGN(S) IF KNOWN:
ALTITUDE:	CONTROLLING AGENCY:

NARRATIVE: **Be as complete as possible. Include recommendations to prevent reoccurrence. Add additional sheets as necessary.**

Attachment 2 – Example Airspace Request Form

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Attachment 3 – Example CCF 24-HR Schedule

The schedule is uploaded each morning between 0600 – 0730L and available for view/download at https://usaf.dps.mil/teams/12162 The weekend and early Monday operations are available Friday after 1730L.